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GEOGRAPHICAL RECORD

THE AMERICAN GEOGRAPHICAL SOCIETY

THE APRIL MEETING OF THE SOCIETY. A regular meeting of the Society was held at the Engineering Societies' Building, No. 29 West Thirty-ninth Street, on Tuesday Evening, April 25, 1911. Vice-President Greenough in the Chair.

The following persons recommended by the Council were elected to Fellowship:

Mrs. Arabella D. Huntington,	Walter Jennings,
Norman James,	William C. Wood.

The Chairman then introduced the Hon. John Green Brady, who gave a lecture on "Alaska." Gov. Brady was for twelve years Governor of the Territory. He treated Alaska in its geographical relations, varieties of climate, mining, fisheries, forests, agriculture and possibilities of large development. Many lantern views were shown, including maps.

AMERICA.

ANNALS OF THE ASSOCIATION OF AMERICAN GEOGRAPHERS. The Association has voted to establish a publication with the above title. The publication Committee is composed of Prof. Richard E. Dodge, Chairman and Editor; Mr. Alfred H. Brooks, Prof. Henry C. Cowles and Prof. Ralph S. Tarr. The *Annals,* for the present, will be an annual volume of about 200 pages containing selected papers read before the Association. The Committee is now receiving the manuscripts of papers read at the Pittsburg meeting.

The next meeting of the Association will be held in Washington during the holidays next winter, in connection with the meeting of the American Association for the Advancement of Science.

THE STATE GEOLOGICAL SURVEYS. The U. S. Geological Survey has just issued *Bull.* 465, "The State Geological Surveys of the United States." This is a most desirable work, for it has been difficult or impossible to obtain information about these surveys. A committee consisting of H. B. Kümmel, New Jersey, C. W. Hayes, U. S. Geol. Surv., F. W. De Wolf, Illinois, and W. McCulloh, New York, was appointed at Washington in the spring of 1910 to take charge of the matter. The committee decided that the end in view could best be attained by requesting the heads of the several surveys to prepare statements regarding the organizations. Mr. Hayes has compiled the *Bulletin* from these statements. Thirty-six states recognize geological work as a necessary and proper governmental function, and have organizations for the carrying on of such work. Idaho, Montana, New Mexico and Utah have had no state surveys.

CANAL ZONE TRIANGULATION SYSTEM. The primary triangulation of the Canal Zone has been completed by the Chief Engineer's Office. The *Canal Record* (April 5, 1911) prints a sketch of the triangulation showing the stations and the network of triangles. The new triangulation system has been made the standard for all survey and location work in the Canal Zone and has been designated as the "Panama-Colon Datum."

GLACIER NATIONAL PARK. The U. S. Geological Survey is now engraving a topographic map of the new Glacier National Park. This splendid playground, the youngest of our national parks, covers nearly a million acres in northwestern Montana just south of the Canadian line and includes the Lewis and Livingston mountain ranges, which constitute the northern Continental Divide. Throughout the area hundreds of peaks rise 8,000, 9,000 or 10,000 feet above sea level, alternating with sheer-walled canyons 1,000, 2,000 and even 3,000 feet in depth, at the bottom of which dash glacial torrents. More than 60 glaciers may be found in the park, some of them several miles in area. The map shows also many lakes, large and small, nestling in the old glacier-scoured basins. The park is described by the Federal topographers as a place of wondrous beauty, one of the most magnificent mountain regions in the world.

GOVERNMENT PHOSPHATE LANDS. About two years ago our Government withdrew from public sale large areas of land underlain by phosphate rock in the recently discovered fields in the public land States, with a view to securing legislation which would prevent exportation of the phosphate. Since then new deposits of phosphate have been discovered by the U. S. Geological Survey. The area now standing withdrawn is over 2,500,000 acres, containing an aggregate of many hundred million tons of phosphate rock and having a very great potential value to the farming industry. The acreage and location of the Government's phosphate areas standing withdrawn from public entry on April 1 are: Montana, 33,950 acres; Florida, 37,439; Idaho, 1,101,517; Utah, 107,745; Wyoming, 1,267,494. Total, 2,548,145.

GEOGRAPHY OF WORCESTER, MASS. A paper by Mr. Robert M. Brown of the State Normal School, Worcester, Mass., on "The Geography of Worcester," has just been published (83 pp., 8 figs). It is a systematic study of home geography intended for mature minds; and it cannot fail to be a good guide to teachers who may follow its plan and content to advantage in arranging talks or studies on home geography for the class room. Many of Mr. Brown's suggestions in the chapter "Map-Work" have been emphasized very little or not at all in the minds of most of our teachers of geography. This chapter may be especially commended for wide perusal. The pamphlet gives one of the best treatments of all the geographic relations of an important city that has yet been printed.

SOILS OF THE OZARK REGIONS. Many state and federal soil survey reports contain clear and accurate descriptions of soil characteristics, together with intelligent discussions of the relations of soils to topography and geology. A considerable number of reports show an appreciation of the geographic relations between the inhabitants and the soils of the areas. Professor C. F. Marbut in a recent bulletin on the "Soils of the Ozark Regions" has written a clear readable description of the structure, topography and soils of the Ozarks in Missouri, with an appreciative discussion of the relations of these factors to the people.

The Ozarks in Missouri, occupying an area of 30,000 square miles, is preeminently a region of limestone rocks. The Ozark uplift bowed the rocks into a gentle dome which was peneplained and subsequently uplifted. The surface is sub-maturely dissected, only a few remnants of the early plain remaining. Erosion on such a structure has produced three areas, fairly distinct in topography and soils.

The Ozark border is for the most part a prairie region with soils derived from Mississippian limestones. The Ozark plateau has rather uniform limestone soils, the soil differences being largely due to topographic variants. The Ozark center is in part composed of crystallines which have been uncovered by erosion of the Ozark dome. Its surface is rough, and its soils are derived from flinty limestone, sandstones and crystallines.

The Ozark soils are relatively infertile when compared to the prairie and alluvial soils of Missouri, although they would compare favorably with many Eastern soils that are considered productive. The agricultural methods in vogue are not well adapted to local conditions. The extensive methods of raising wheat and corn which prevail in the prairies are not suitable for the Ozarks. When the methods and crops are properly adapted to the region, Prof. Marbut holds that the Ozark center will support a sparse agricultural population in the valleys by grain growing, while the uplands will be devoted to timber. Stock raising and dairying on the Ozark Plateau and dairying and general farming on the Ozark Border are best suited to these regions.

The permanent settlers of the Ozarks were for the most part from the Southern Appalachians, and except in the larger mining areas, the country is still largely peopled by their descendants. The early comers settled along the narrow flood plains or "bottoms." As population increased, settlement spread to the interstream uplands. Stock raising at first was the principal occupation, but with the exhaustion of the range, grain raising followed, with poor returns. Owing to decreasing returns from the land and subdivision of the original farms, the average farmer's income is less than that of his father. There is widespread discontent and eager search for more remunerative methods.

Professor Marbut's contribution is entitled "Soils of the Ozark Region, *Research Bulletin No. 3* of the Agricultural Experiment Station, University of Missouri." It includes 273 pages, structural sections and a colored map showing the distribution of soil types.

F. V. EMERSON.

LOW TEMPERATURES INJURIOUS TO ORANGES. During the cold weather of December 30-31, 1909, in Florida, some interesting observations were made by Civil Engineer Frank Merriwether, of Winter Park, Florida, in order to ascertain at what temperature oranges really freeze. Mr. Merriwether sat up the entire night of December 29-30, to watch his thermometers. Through a small hole in the rind of an orange hanging on a tree, the cylindrical bulb of a thermometer was pushed into the pulp, the rind fitting closely around the glass stem of the instrument. The readings were as follows: 9 P. M., 43°; 10 P. M., 40°; 11 P. M., 37°; 12 P. M., 35°. At midnight a second thermometer, similar to the first, was hung near the orange, in order to get the air temperatures. It appears that the orange must have begun to freeze at 5.30 A. M., when the immersed thermometer showed 26°, while the air temperature was 24°. After that time the mercury in the thermometer whose bulb was inside the orange, rose, as a result of the freezing. (*Monthly Weather Review*, Jan., 1910.)

R. DEC. WARD.

THE HANDBOOK OF AMERICAN INDIAN LANGUAGES. Part 1 of this work, prepared under the editorial supervision of Dr. Franz Boas, appears as *Bulletin* 40, of the Bureau of American Ethnology. It embraces vi and 1,069 pp. and contains, besides the contributions of Dr. Boas, papers by a number of collaborators. This work had its inception in an attempt to prepare a revised edition of the "Introduction to the Study of Indian Languages," by Major J. W. Powell. In Major Powell's introduction there was much linguistic material and many vocabularies, but the essential features of the morphology of American languages were not known at the time his work was prepared. Special attention is called in the present work to the morphology and phonetics of American languages; and the necessity of an analytical study of grammar is emphasized.

AFRICA

THE EAST AFRICAN CENTRAL RAILROAD. Over 10,000 native laborers are employed in constructing this railroad from Daressalam to Tabora in German East Africa. The road has been completed to Kilimatinde, 374 miles from Daressalam. The track head is still 189 miles from Tabora, but it is expected that the lines will be in operation from the Indian Ocean to that important inland trade center by the end of 1912. Thus far, the Reichstag has provided only for building the line to Tabora, but according to the *Deutsch Ostafrikanische Zeitung* (No. 20, 1911), the extension of the line to Ujiji on Lake Tanganyika is practically assured. This extension will add over 200 miles to the length of the road, making the total length between the Indian Ocean and Tanganyika about 800 miles. When this enterprise is completed and the Belgian Congo extends its Upper Congo R.R. system to the western shore of Tanganyika, as it has decided to do, there will be uninterrupted steam communication by river, lake and rail, east and west across Africa from Banana at the mouth of the Congo, to Daressalam on the Indian Ocean.

TOPOGRAPHICAL SURVEY IN UGANDA. The *Geographical Journal* (April, 1911), reports that a topographical survey party under command of Capt. W. C. Macfie, R. E., arrived in Uganda in February, 1909, and were at work in the country for nineteen months, during which they surveyed 14,000 sq. miles on the scale of 1:25,000. The survey is of exceptional interest, as it completes the first accurate topographical survey of any considerable block of country in tropical Africa. This work, with the earlier surveys, completes a connected area of accurate topographical survey of no less than 32,000 square miles, a region about three-fourths as large as the state of New York. The maps are in course of preparation, and it is hoped that they will be published at an early date. Unfortunately, Lieut. Pennington and Corporal Corner, in the small party of ten men, died from the effects of the climate and the exacting work.

ASIA

CLIMATE OF PALESTINE. The climate of Palestine has long been a subject of interest, not only to students of the Bible, but also to the increasing number of persons who are looking into the question of climatic changes. An important study, "Zum Klima von Palaestina," has recently been published under the auspices of the German Palaestina Verein (*Zeitschr. Deutsch. Palaestina-Ver.*, XXXIII, pp. 107, ff. 1910). The writer is Dr. Felix M. Exner of Vienna. In this pamphlet of 60 pages, Dr. Exner has given a clear, concise account of the climatology of Palestine. The region, as is well known, is in the subtropical belt, and the dominant characteristics are the rainy and dry seasons. The annual rainfall is the most important climatic element from the practical point of view. The annual rainfall is small, and varies much from year to year, as is usual in these border-lands between different rainfall régimes. In general, wet years occur with low pressure over Palestine in winter, and dry years with high pressure. The winter low pressure area of the Mediterranean Sea extends over the coast of Syria, and the greater the eastward extension of this depression, the heavier is the rainfall over Palestine. The rains come from the Mediterranean, with southwest winds. In summer, on the contrary, the pressure is low in the east of Palestine, over the desert. The resulting west and northwest winds bring relatively cool air in summer. Dr. Exner points out that there are not available enough data regarding the rainfall to make possible, at present, any critical study of the outstanding hydrographic problems. A rainfall chart and two pressure charts are appended. R. DEC. WARD.

AUSTRALASIA AND OCEANIA

THE GERMAN-DUTCH BOUNDARY EXPEDITION IN NEW GUINEA. The completion of the work of this expedition was recently reported. A despatch from Dr. Schultze, printed in the *Deutsches Kolonialblatt* for Feb. 15, adds new details as to the experience of the Commission while ascending the Kaiserin Augusta River, September to November, 1910. After the gunboats reached the limit of navigation the German and Dutch Survey parties went on in small boats assisted for a time by two steam launches. The longitude of 140° 12′ E. (which was 12′ east of the boundary) was reached on Oct. 3, in 4° 4′ 18″ S., and here a camp was formed. An attempt to push northward towards the point reached by the previous land expedition along the 141st meridian proved unavailing, the country being a level swampy plain like that which had hindered an advance from the north. The parties accordingly turned south to continue in boats the exploration of the Upper Sepik which is the name the natives give to the Kaiserin Augusta River. They reached, on Oct. 20, a rock defile by which the river emerges from the mountains. Above this point the river is a rapid, shallow stream, navigable only by light draught canoes. Contrary to expectation it proved to come from the east of south or in German Territory and thus is hardly suited, except for a short distance, to serve as part of the International boundary. It was traced with considerable difficulty to about 4° 49′ S., 141° 15′ E., when the north-west monsoon set in with violence, the rise of the river threatened to cut off retreat and so the return journey was begun. The Dutch party surveyed some of the tributaries while the Germans ascended one of the peaks near the turning point gaining, for the first time, a general idea of the configuration of the country traversed. Towards the west the view extended as far as Mt. Juliana in the Central Snowy Range. The Kaiserin Augusta River has now been ascended for 600 miles and at the farthest point reached appears to come from the direction of the Victor Emmanuel Range. (Condensed from *Geogr. Journ.,* April, 1911, pp. 452-453).

AUSTRALIAN METEOROLOGY. The Australian Commonwealth Bureau of Meteorology has recently published a new rainfall map of New South Wales, showing the isohyets for 5 or 10 inches. At each station the mean annual rainfall is shown in figures, the data being compiled from all yearly records available covering a period of 15 years and over. All figures are revised up to the end of the year 1908. This map for New South Wales is the first of a series, now in course of preparation, which will include all the States of Australia.

The first number (Vol. 1, No. 1) of the new *Monthly Meteorological Report of the Australian Commonwealth* bears date January, 1910, and gives good promise of being a valuable addition to the regular publications of the national weather services. It is especially to be noted that attention is paid to the cyclonic and anticyclonic tracks, and to the control of these areas over the weather of the month. A rainfall and a temperature map are included. As compared with most other official publications of a similar kind, the Australian report is welcome in being compact, clear, and interesting.

A third publication, by E. T. Quayle, "On the Possibility of Forecasting the approximate Winter Rainfall for Northern Victoria" (*Bulletin* No. 5, March, 1910) deals with the relation of the winter rains to the preceding number of summer monsoon depressions. Some remarkable agreements are brought out, but there are also distinct disagreements, and it is as yet too early to come to any very satisfactory conclusions in the matter. R. DeC. Ward.

EUROPE

The Population of Germany. The census of Germany taken on December 1st, 1910, shows a population of 64,896,881 persons against 60,641,489 in 1905, 56,367,178 in 1900 and 49,426,470 in 1890. The increase in population in the last five year period was 4,255,392 or 6.56 per cent. The population of the states numbering over 1,000,000 inhabitants each was, on Dec. 1 last, as follows:

Prussia, 40,156,791; Bavaria, 6,876,497; Saxony, 4,802,485; Württemberg, 2,435,611; Baden, 2,141,832; Alsace-Lorraine, 1,871,702; Hesse, 1,282,219; Hamburg, 1,015,707.

Population of Switzerland on Dec. 1, 1910. The census of the Republic shows a population of 3,736,685 persons. The area of the Republic being 41,324 square kilometers the density of population is 90 to the square kilometer. In the eighteen cantons with predominant German population the number of inhabitants is 2,591,574, in the five cantons with predominant French population, 867,310, and in the two Italian cantons, Graubünden and Tessin, 277,810. The German cantons show a density of 129, the French of 77, and the Italian of 28 to the square kilometer.

Prof. Cora's "Cosmos." All geographers will remember the excellent Italian geographical periodical *Cosmos,* established in 1873 and conducted by Prof. Guido Cora. Its publication has been suspended since 1896 but it has again appeared (Serie II, Vol. XIII). Prof. Cora announces that, beginning with January, 1912 *Cosmus* will be regularly published as a bi-monthly. It will maintain the geographical standard that established its reputation from its first appearance. The most conspicuous paper in No. IV, just received, is a geological study by Prof. Federico Sacco, entitled "L'Appennino settentrionale e centrale." The number concludes with an excellent department of book and map reviews.

POLAR

Dr. Mawson's Antarctic Plans. Dr. Douglas Mawson, the physicist of the Shackleton Expedition and lecturer on mineralogy and petrology at the University of Adelaide, South Australia, read a paper before the Royal Geographical Society, London, on April 10, on scientific work in the Antarctic, the problems to be solved and the plans of the Australian Expedition which he will lead there about the close of this year. A part of the paper is printed in *Nature,* (April 13, 1911), from which the following information is taken:

"Because," says Dr. Mawson, "the Ross Sea area is more conveniently situated to the south geographic pole, most expeditions to the Australian quadrant have wintered there. This has led to the neglect of the great coast-line westward of Cape Adare. Our information regarding it is very fragmentary, and for the most part untrustworthy. Properly equipped, an expedition to this region should have no difficulty in achieving great geographical success. In the words of Dr. H. R. Mill, 'It is time, at any rate, that someone should revisit lands discovered by Biscoe, Balleny, D'Urville, and Wilkes.' . . .

"Lying within wireless telegraphic distance of our borders, this region has a special call upon Australians. Alive to the value of scientific data there massed waiting to be collected I have ardently sought for an opportunity to reap the harvest. Captain Scott's programme was too full with the determined efforts in view upon the south geographical pole and King Edward VII Land, to accede to my request to be landed this year with a party at Cape Adare. It was then that Sir Ernest Shackleton proposed to raise the necessary funds, and, with myself in charge of the scientific work, to attack the whole coast-line between Cape Adare and Gaussberg. The plans were published in the press on March 19, 1910, and repeated later in the year. Eventually Sir Ernest Shackleton handed over the command to me.

"We hope to have a complement of fifty men (ship and land party) and proceed south from Australia about the close of this year. Practically every member of the land party will be a specialist in a particular branch of science. Most of the recruiting will be among the graduates of the universities of Australia and New Zealand.

"It is our intention to land several parties with stores and huts, to winter between Cape Adare and Gaussberg, and the ship will return to Australia and New Zealand for the winter, though not remaining idle. It had been our intention of dropping a few men at Cape Adare, for that is the easiest and most accessible landing on the Antarctic continent. The facilities there afforded of coal and stores left by Borchgrevinck's expedition would have further simplified matters. In the light of recent events, of course, this must be eliminated from our programme. It is our special desire to accomplish a complete coast survey between the two points mentioned, and complete the magnetic charting of the region north of the south magnetic pole. The several wintering stations will simultaneously despatch coastal sledging parties on either hand, thus dividing up the task. A special journey will be made inland from our main base on the north coast to the south magnetic pole, thus completing, in conjunction with the former journey in which I participated, the crossing of that corner of South Victoria Land. For the rest, without entering into details, I may say that no branch of science will be neglected."

PHYSICAL GEOGRAPHY

CENTERS OF ACTION AND SEASONAL WEATHER. Within the last ten years numerous studies by Hann, Hildebrandsson, Meinardus, Teisserenc de Bort and others, have shown some remarkable correlations between the location and the development of the great "centers of action" of the earth's atmosphere and the character of the seasonal weather in adjacent, and even in remote regions. The whole subject is one which is receiving an increasing amount of attention. It is one of the most important aspects of the new "world meteorology," as it has been so well called. Curiously enough, although the effect of the smaller cyclones and anticyclones of our daily weather maps upon daily weather conditions has been long known, the effects of the larger, more permanent "centers of action" upon seasonal weather—a perfectly logical extension of this correlation—

have been only recently noted. Along these lines will undoubtedly run the long-range forecasts of the future.

Hildebrandsson has recently published a further contribution to this subject: "Sur la Compensation entre les Types des Saisons simultanés en différentes Régions de la Terre" (*K. Svensk. Vetenskap. Handl.* 45, No. 11). The same author had already suggested that the condition of the ice in the polar seas is the principal cause of a difference in the seasonal types, a matter which is also under investigation at the present time by Mossman, of the Argentine Meteorological Office. Hildebrandsson now calls attention to the fact that there is an opposition, both in winter and in summer, between the north and south of Europe and of North America; probably also between the sub-tropical and sub-polar regions of the Southern Hemisphere, and between the north of Europe and Siberia. There are some regions where the opposite character of the seasons is less pronounced in some years, and these Hildebrandsson finds to be intermediate between the main centers of action, and dependent upon the intensity of the latter. The whole paper is very suggestive of the growing importance of such broad studies of world meteorology. R. DeC. Ward.

The Cyclonic Unit in Climatology. The importance of the cyclonic unit in climatological investigations, in addition to the conventional units of the day, the month and the year, is emphasized in a recent paper, entitled "The Study of Phenomenal Climatology" (*Quart. Journ. Roy. Met. Soc.*, Jan., 1910), by William Gardner Reed, Jr., of Harvard University. The discussion is based upon a series of thermograph and barograph curves for Nashua, N. H. After some study, it was found that the "temperature belt" (the strip between the lines connecting the crests of the thermograph curve and the troughs of the same curve) furnishes the best criterion for the classification of the cyclonic and anticyclonic units. Five classes of temperature belts are adopted, and a tentative scheme of summarizing the ordinary meteorological data according to these units has been devised. In order to put this scheme into practice, the author makes use of the weather conditions of Boston, Mass., for the first three months of 1909, and analyses them by the five classes of temperature belts. The paper is an interesting original contribution to a subject which is certain to receive more and more attention. Numerous typical thermograph and barograph curves are given, in illustration of the different units. R. DeC. Ward.

PERSONAL

Colonel P. K. Kozloff. This Russian explorer has received the Founders' Medal of the Royal Geographical Society for his explorations in Central Asia, since 1883.

Dr. J. Charcot. The Royal Geographical Society has awarded the Patron's Medal to Dr. Charcot for his expeditions to the Antarctic Continent, first in 1903-05, and second in 1909-10.